



General

Guideline Title

American College of Gastroenterology guideline: management of acute pancreatitis.

Bibliographic Source(s)

Tenner S, Baillie J, Dewitt J, Vege SS. American College of Gastroenterology guideline: management of acute pancreatitis. *Am J Gastroenterol*. 2013 Sep;108(9):1400-15. [157 references] [PubMed](#)

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

Definitions of the quality of evidence (high, moderate, low, and very low) and strength of recommendations (strong and conditional) are provided at the end of the "Major Recommendations" field.

Diagnosis

1. The diagnosis of acute pancreatitis (AP) is most often established by the presence of 2 of the 3 following criteria: (i) abdominal pain consistent with the disease, (ii) serum amylase and/or lipase greater than three times the upper limit of normal, and/or (iii) characteristic findings from abdominal imaging (Strong recommendation, moderate quality of evidence).
2. Contrast-enhanced computed tomography (CECT) and/or magnetic resonance imaging (MRI) of the pancreas should be reserved for patients in whom the diagnosis is unclear or who fail to improve clinically within the first 48–72 hours after hospital admission or to evaluate complications (Strong recommendation, low quality of evidence).

Etiology

1. Transabdominal ultrasound should be performed in all patients with AP (Strong recommendation, low quality of evidence).
2. In the absence of gallstones and/or history of significant history of alcohol use, a serum triglyceride should be obtained and considered the etiology if $>1,000$ mg/dl (Conditional recommendation, moderate quality of evidence).
3. In a patient >40 years old, a pancreatic tumor should be considered as a possible cause of AP (Conditional recommendation, low quality of evidence).
4. Endoscopic investigation of an elusive etiology in patients with AP should be limited, as the risks and benefits of investigation in these patients are unclear (Conditional recommendation, low quality of evidence).
5. Patients with idiopathic AP (IAP) should be referred to centers of expertise (Conditional recommendation, low quality of evidence).

6. Genetic testing may be considered in young patients (<30 years old) if no cause is evident and a family history of pancreatic disease is present (Conditional recommendation, low quality of evidence).

Initial Assessment and Risk Stratification

1. Hemodynamic status should be assessed immediately upon presentation and resuscitative measures begun as needed (Strong recommendation, moderate quality of evidence).
2. Risk assessment should be performed to stratify patients into higher- and lower-risk categories to assist triage, such as admission to an intensive care setting (Conditional recommendation, low to moderate quality of evidence).
3. Patients with organ failure should be admitted to an intensive care unit or intermediary care setting whenever possible (Strong recommendation, low quality of evidence).

Initial Management

1. Aggressive hydration, defined as 250–500 ml per hour of isotonic crystalloid solution should be provided to all patients, unless cardiovascular, renal, or other related comorbid factors exist. Early aggressive intravenous hydration is most beneficial during the first 12–24 hours, and may have little benefit beyond this time period (Strong recommendation, moderate quality of evidence).
2. In a patient with severe volume depletion, manifest as hypotension and tachycardia, more rapid repletion (bolus) may be needed (Conditional recommendation, moderate quality of evidence).
3. Lactated Ringer's solution may be the preferred isotonic crystalloid replacement fluid (Conditional recommendation, moderate quality of evidence).
4. Fluid requirements should be reassessed at frequent intervals within 6 hours of admission and for the next 24–48 hours. The goal of aggressive hydration should be to decrease the blood urea nitrogen (BUN) (Strong recommendation, moderate quality of evidence).

Endoscopic Retrograde Cholangiopancreatography (ERCP) in AP

1. Patients with AP and concurrent acute cholangitis should undergo ERCP within 24 hours of admission (Strong recommendation, moderate quality of evidence).
2. ERCP is not needed early in most patients with gallstone pancreatitis who lack laboratory or clinical evidence of ongoing biliary obstruction (Strong recommendation, moderate quality of evidence).
3. In the absence of cholangitis and/or jaundice, magnetic resonance cholangiopancreatography (MRCP) or endoscopic ultrasound (EUS) rather than diagnostic ERCP should be used to screen for choledocholithiasis if highly suspected (Conditional recommendation, moderate quality of evidence).
4. Pancreatic duct stents and/or postprocedure rectal non-steroidal anti-inflammatory drug (NSAID) suppositories should be utilized to lower the risk of severe post-ERCP pancreatitis in high-risk patients (Conditional recommendation, moderate quality of evidence).

The Role of Antibiotics in AP

1. Antibiotics should be given for an extrapancreatic infection, such as cholangitis, catheter-acquired infections, bacteremia, urinary tract infections, pneumonia (Strong recommendation, moderate quality of evidence).
2. Routine use of prophylactic antibiotics in patients with severe AP is not recommended (Strong recommendation, moderate quality of evidence).
3. The use of antibiotics in patients with sterile necrosis to prevent the development of infected necrosis is not recommended (Strong recommendation, moderate quality of evidence).
4. Infected necrosis should be considered in patients with pancreatic or extrapancreatic necrosis who deteriorate or fail to improve after 7–10 days of hospitalization. In these patients, either (i) initial computed tomography (CT)-guided fine-needle aspiration (FNA) for Gram stain and culture to guide use of appropriate antibiotics or (ii) empiric use of antibiotics after obtaining necessary cultures for infectious agents, without CT FNA, should be given (Strong recommendation, moderate evidence).
5. In patients with infected necrosis, antibiotics known to penetrate pancreatic necrosis, such as carbapenems, quinolones, and metronidazole, may be useful in delaying or sometimes totally avoiding intervention, thus decreasing morbidity and mortality (Conditional recommendation, moderate quality of evidence).
6. Routine administration of antifungal agents along with prophylactic or therapeutic antibiotics is not recommended (Conditional recommendation, low quality of evidence).

Nutrition in AP

1. In mild AP, oral feedings can be started immediately if there is no nausea and vomiting, and the abdominal pain has resolved (Conditional

recommendation, moderate quality of evidence).

2. In mild AP, initiation of feeding with a low-fat solid diet appears as safe as a clear liquid diet (Conditional recommendation, moderate quality of evidence).
3. In severe AP, enteral nutrition is recommended to prevent infectious complications. Parenteral nutrition should be avoided, unless the enteral route is not available, not tolerated, or not meeting caloric requirements (Strong recommendation, high quality of evidence).
4. Nasogastric delivery and nasojejunal delivery of enteral feeding appear comparable in efficacy and safety (Strong recommendation, moderate quality of evidence).

The Role of Surgery in AP

1. In patients with mild AP, found to have gallstones in the gallbladder, a cholecystectomy should be performed before discharge to prevent a recurrence of AP (Moderate recommendation, moderate quality of evidence).
2. In a patient with necrotizing biliary AP, in order to prevent infection, cholecystectomy is to be deferred until active inflammation subsides and fluid collections resolve or stabilize (Strong recommendation, moderate evidence).
3. Asymptomatic pseudocysts and pancreatic and/or extrapancreatic necrosis do not warrant intervention regardless of size, location, and/or extension (Moderate recommendation, high quality of evidence).
4. In stable patients with infected necrosis, surgical, radiologic, and/or endoscopic drainage should be delayed preferably for more than 4 weeks to allow liquification of the contents and the development of a fibrous wall around the necrosis (walled-off necrosis) (Strong recommendation, low quality of evidence).
5. In symptomatic patients with infected necrosis, minimally invasive methods of necrosectomy are preferred to open necrosectomy (Strong recommendation, low quality of evidence).

Definitions:

The Grading of Recommendations Assessment, Development, and Evaluation (GRADE) system was used to evaluate the quality of evidence and strength of recommendation.

Quality of Evidence

High: Further research is very unlikely to change confidence in the estimate of effect.

Moderate: Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate.

Low: Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate.

Very Low: Any estimate of effect is very uncertain.

Strength of Recommendations

Strong: The desirable effects of an intervention clearly outweigh the undesirable effects or clearly do not.

Conditional: The tradeoffs are less certain between the desirable and undesirable effects of an intervention.

Clinical Algorithm(s)

An algorithm titled "Management of Pancreatic Necrosis When Infection Is Suspected" is provided in the original guideline document.

Scope

Disease/Condition(s)

Acute pancreatitis (AP)

Guideline Category

Diagnosis

Management

Risk Assessment

Treatment

Clinical Specialty

Gastroenterology

Internal Medicine

Surgery

Intended Users

Advanced Practice Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To present recommendations for the management of patients with acute pancreatitis (AP)

Target Population

Patients with acute pancreatitis (AP)

Interventions and Practices Considered

Assessment/Diagnosis

1. Assessment of signs and symptoms
2. Laboratory investigations:
 - Serum amylase
 - Serum lipase
 - Triglyceride levels
3. Imaging:
 - Contrast-enhanced computed tomography (CECT)
 - CT-guided fine-needle aspiration (FNA) and culture
 - Magnetic resonance imaging (MRI)
 - Transabdominal ultrasound
4. Genetic testing (<30 years old)
5. Risk assessment
6. Assessment of hemodynamic status

Management/Treatment

1. Referral to centers of expertise (as indicated)
2. Admission to intensive care or intermediary care unit (if necessary)
3. Early aggressive intravenous hydration
4. Frequent reassessment of fluid requirements

5. Endoscopic retrograde cholangiopancreatography (ERCP)
6. Pancreatic duct stents
7. Postprocedure rectal non-steroidal anti-inflammatory drug (NSAID) suppositories
8. Antibiotics
9. Nutrition (oral low-fat solid diet, clear liquid diet, enteral or parenteral nutrition)
10. Cholecystectomy
11. Necrosectomy (minimally invasive, open necrosectomy)

Major Outcomes Considered

- Incidence and severity of complications
- Mortality
- Symptom improvement

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

A search of MEDLINE via the OVID interface using the MeSH term "acute pancreatitis" limited to clinical trials, reviews, guidelines, and meta-analyses for the years 1966–2012 was undertaken without language restriction, as well as a review of clinical trials and reviews known to the authors were performed for the preparation of the guideline document.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Quality of Evidence

The GRADE (Grading of Recommendations Assessment, Development and Evaluation) system was used to evaluate the quality of evidence.

High: Further research is very unlikely to change confidence in the estimate of effect.

Moderate: Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate.

Low: Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate.

Very Low: Any estimate of effect is very uncertain.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

Description of the Methods Used to Analyze the Evidence

See the "Rating Scheme for the Strength of the Evidence" field.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

See the "Rating Scheme for the Strength of the Recommendations" field.

Rating Scheme for the Strength of the Recommendations

Strength of Recommendations

The Grading of Recommendations Assessment, Development and Evaluation (GRADE) system was used to evaluate the strength of the recommendations.

Strong: The desirable effects of an intervention clearly outweigh the undesirable effects or clearly do not.

Conditional: The tradeoffs are less certain between the desirable and undesirable effects of an intervention.

Cost Analysis

The guideline developers reviewed published cost analyses.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

In an effort to make new guidelines as "fresh" as possible when published, the American College of Gastroenterology (ACG) created a special guideline review process, involving members of the Board of Trustees, Practice Parameters Committee and the American Journal of Gastroenterology. It is the goal to review the guideline, allow the authors to revise the guideline, and re-review the guideline within 6 months of first submission. Therefore the entire process should take 1 year from commission to finished, accepted guideline.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate management of individuals with acute pancreatitis (AP)

Potential Harms

Adverse events and complications associated with treatment:

- Endoscopic investigation in patients with acute idiopathic pancreatitis should be limited, as the risks and benefits of investigation in these patients are unclear.
- In patients with biliary pancreatitis who have mild disease, and in patients who improve, endoscopic retrograde cholangiopancreatography (ERCP) before cholecystectomy has been shown to be of limited value and may be harmful.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Clinical Algorithm

Patient Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Safety

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2013 Sep

Guideline Developer(s)

American College of Gastroenterology - Medical Specialty Society

Source(s) of Funding

American College of Gastroenterology (ACG)

Guideline Committee

Not stated

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

Financial support: None

Potential competing interests: None

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available from the [American College of Gastroenterology \(ACG\) Web site](#) .

Availability of Companion Documents

The following is available:

- American College of Gastroenterology Practice Parameters Committee. Guideline development policies. 2010 Jan. Available from the [American College of Gastroenterology \(ACG\) Web site](#) .

Patient Resources

Information on acute and chronic pancreatitis is available from the [American College of Gastroenterology's Patient Education & Resource Center Web site](#) .

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

This summary was completed by ECRI Institute on November 6, 2013. The information was verified by the guideline developer on November 12, 2013. This summary was updated by ECRI Institute on September 18, 2015 following the U.S. Food and Drug Administration advisory on non-aspirin nonsteroidal anti-inflammatory drugs (NSAIDs).

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